



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

INLAND WATERWAY POLICY

EMORY R. JOHNSON

The trend of public sentiment in favor of improving the navigability of the waterways in the United States and of making more systematic and economical use of the country's water resources is unmistakable. This sentiment finds expression in the numerous local waterways associations, in the National Rivers and Harbors Congress, the National Irrigation Congress, the National Conservation Congress, in the reclamation work of the state and national governments, and in the recent adoption by Congress of the plan of an annual rivers and harbors bill.

While the desirability of conserving, for present and future use, the water resources of the United States is generally admitted, there are many who question the wisdom of large expenditures from the national treasury for the canalization of rivers and the construction of canals. Even the advocates of waterway improvements are uncertain as to the means and methods by which the program is to be carried out. The time seems opportune for considering the conditions precedent to the successful development and use of natural and artificial waterways within the United States.

The first requisite of success in waterway improvement is the limitation of the number of works to be executed to those that can be financed and can be carried to completion within a reasonable time. Unless the work undertaken can be confined to the river and canal projects of major importance, there is little prospect that our inland waterways will ever be made of much service to commerce. The zeal of local interests, pressing for the immediate commencement of a host of projects, is the chief obstacle to the successful completion of any work.

The difficulties of the situation grow out of our federal scheme of legislation and administration, and there is little prospect of any very radical change in our machinery of government action. The Newlands bill providing for a National Waterways Commission subject solely to the President and possessing full discretionary power in the use of the funds appropriated by Congress was an iridescent dream that made slight appeal to practical men in or out of Congress. We can not hope to lessen radically, if we

would, the control of river and harbor improvements by Congress acting through its appropriate committees, and the government may confidently be expected to act through the Corps of Engineers of the Army in the execution of authorized work.

The situation as regards legislative policy and methods is, however, by no means hopeless. The firm stand taken by the last two chairmen of the House Committee on Rivers and Harbors in favor of a national plan of waterway improvement and of going ahead with the works that have been begun instead of multiplying new projects, the disposition of Congress not to authorize any new works in advance of an affirmative report as to their feasibility by the Corps of Engineers, the declared purpose of the President not to sign a river and harbor bill that does not provide solely for the execution of such works as the United States Engineers have declared to be of general public importance—all this and more indicates a growing sense of the need of a more truly national policy in legislating for the improvement of waterways.

Permanent reform in political processes can usually come only by evolution, by the pressure of a clearly-defined public sentiment. Congressional methods of river and harbor legislation can be—are being—modified by the education of the public. The creation of an intelligent public sentiment in favor of adhering to a national policy of waterway improvement has been made somewhat easier by the investigation and report of the National Waterways Commission. The task ahead of us is to continue the work of education until not only the President but also Congress—always responsive to intelligent public sentiment—shall feel compelled to adopt the national point of view.

The survey and construction work connected with waterway improvement should remain with the Corps of Engineers. Somewhat greater discretion in the execution of authorized works should be given by Congress to the Secretary of War and the Chief of Engineers, and the Corps should be increased in number. When added responsibility has been placed upon the Corps and its numbers have been increased, it will doubtless be possible and desirable for it to develop a more specialized, and thus a more efficient, organization for doing its river and harbor work.

The second requisite of success in waterway development is the adoption of a practical plan of financing the work. In dealing with this problem, conservative and practical wisdom are especially

important; but it can not be said that the advocates of an extensive program of waterway improvement and construction have made clear how the waterways are to be paid for. Our policy has been, and is, to pay for all river and harbor work out of the current revenues of the national government; and this plan of paying as we go is to be commended. At the same time, it is clearly evident that present revenues are not large enough to enable Congress to proceed with the development of our inland waterways at an economical rate, or at a rate that will make our waterways commercially useful within a reasonable time; if, indeed our present slow methods can ever give us waterways adapted to business requirements.

Unless expenditures for pensions and the army and navy establishments can be reduced—and this is highly improbable—the funds required for the extension and improvement of waterways can be secured only by increasing taxes or by borrowing money. As between these two alternatives, the safer and wiser policy to choose is to increase taxes and to continue to pay for river and harbor improvements and canal works out of current revenues; but it is doubtful whether, as a practical measure, the funds required for waterways can be secured either by the imposition of a special tax or by an increase in general taxes made for the particular purpose of securing the capital required for investment in waterways.

Such a fiscal measure could, probably, be adopted and carried out, if systematic and scientific budget-making and the careful correlation of expenditures with definite sources of revenue were a part of our federal financial methods; but such methods of budget-making are difficult to adopt in a government which separates sharply its executive and legislative branches. Here, again, it is necessary to consider waterway policy with reference to the actual facts of government action and to look for progress by evolution. Advance is being made in the budgetary and fiscal methods of the national government and the financing of public works will be increasingly scientific in the future.

If bonds are issued to secure funds for the improvement or construction of waterways, provision should be made, when the bonds are authorized, for the payment of the interest and principal of the debt; and the only sources from which the money for these payments can be obtained are taxes (general or special) and tolls for the use of the waterways. The policy, in this country, has

been to improve and maintain the waterways, even canals, for the free use of the public. Ought this policy to be adhered to in the future?

There have been strong reasons in the past for developing the waterways as free highways. In the first half of the last century, the government—the states for the most part instead of the nation—improved and extended the waterways in order that the country might be occupied and its products marketed. The railways were in their infancy, and their services were inadequate to meet the public need for transportation. In the latter half of the century, waterways came, more and more, to be fostered as competitors and regulators of the otherwise slightly regulated railroads.

Now that we have subjected railway rates and services to effective public control, the waterways are, primarily, to be considered, along with the railroads, as an essential part of our general transportation system. The waterways are now to be developed, if they *are* to be developed, mainly in accordance with the demand and the necessity for the facilities they can afford. To some extent they will continue to act as competitors and regulators of the railroads; but, for the most part, they will supply additional transportation facilities complementary to those furnished by the widespread system of railroads.

This change in the economic function of inland waterways makes questionable the necessity and the advisability of relieving their users of all tolls. If tolls may wisely be charged for the use of canals and canalized rivers, and if the charges thus levied can be made to bear the operating and maintenance expenses, and possibly to contribute something toward the capital construction costs, the problem of financing a program of waterway improvement and extension will be simplified. In this connection, the experiences of France and Prussia—the countries that lead all others in waterway development—is instructive.

To carry out the large program of waterway improvements adopted in 1879, France borrowed funds at 3 per cent. Tolls were abolished, and both the capital and the maintenance costs were borne by the state. The legislation of 1903 changed the policy of 1879 by requiring the various beneficiary parties to contribute half the cost of constructing new works. Tolls and traffic dues may be charged on these new waterways to reimburse the localities and private interests that advance half the

cost. The state does not deem it to be necessary to borrow funds to meet its half of the costs; its contributions are to be made from current revenues; but the localities or parties in interest who advance the other half are permitted to issue debentures.

Prussia meets the expenses incurred in waterway improvements from current revenues, if they suffice, or from special loans authorized by law, if such loans are found to be necessary. The law of 1905 requires the provinces and public corporations to guarantee the expenses of operating and maintaining new works and to pay interest upon and to amortize one third of the capital cost of those works. Tolls and dues are levied on canals and canalized rivers. On rivers regulated without locks and dams, charges may, under the imperial constitution as it has been interpreted up to the present time, be levied only for the use of special facilities created in the interest of traffic.

In general it may be said that the policy of both France and Prussia is to return to the practice of charging tolls on those waterways upon which large sums are expended and to require the localities and parties most directly benefited by a new waterway to share with the state the costs of construction and maintenance. This is a more conservative financial policy than has previously prevailed, but it makes readily possible and practically certain the steady improvement and extension of inland waterways, despite the large cost of creating and maintaining waterways adapted to the requirements of present-day and future commerce.

There seems no valid, or at least no irrefutable, reason why the United States or the states should not henceforth charge a moderate toll for the use of a canal or for passing a lock in a canalized river. The funds thus obtained would, naturally, be devoted, first, to the payment of operating and maintenance expenses; second, to paying the interest on any bonds that may have been issued to improve or construct the waterway; and, third, to the amortization of the principal of the loan.

It will be urged, and with truth, that but few rivers or canals in the United States can be made fully to finance their operation, maintenance, and capital costs. The question, as regards tolls, is not whether all canals and improved rivers should be required to reimburse the government for all funds expended upon them, but whether each waterway should be required to pay such tolls as the waterway can bear without restriction of traffic. The policy of levying such tolls for the use of the enlarged Erie Canal

as its traffic will bear would be sound in principle; and the same may be said of the Ohio River when the government shall have provided a reliable nine-foot channel.

In so far as waterways cannot finance themselves they should be improved and constructed from the current revenues of the federal and state governments and not by borrowed funds, unless the payment of the interest and principal of each loan is provided for from a specified tax or from some particular source of revenue. Up to the present time, this has not been the accepted method of financing public works in the United States. In the past, our government activities, especially those of the national government, have been comparatively few, and our sources of revenue have been abundant; but, of late, federal functions have been rapidly multiplying and we are beginning to realize that the national revenues are not capable of indefinite increase. To equip our country with up-to-date water transportation facilities will require a large expenditure of funds, and the work can not be accomplished at all unless the financial difficulties are recognized and conservatively solved.

In this connection, however, it should be borne in mind that river improvement and regulation may be desirable, and even necessary, not alone for the uses of navigation, but also for the development of water power, the prevention of destructive floods, the reclamation of overflowed lands, and, in some sections, for the irrigation of arid districts. The problems connected with the conservation and use of the water resources of the country for navigation, power, and productive purposes, and for supplying urban communities must be solved together. National, state, and local governments have been dealing with these problems without sufficient coöperation.

There is need of a greater degree of association. This is as true of the work of improving and extending waterways and equipping them for commercial uses as it is of the other related and equally important tasks of making the water resources of the country available for power, production, and municipal uses. Formerly, the national government left the regulation and development of waterways to the states; latterly, the states have been looking mainly to Congress. Neither policy is wise for the present or future. The nation and the states should work together as they are beginning to do, and as they must much more closely in the future.

This is the third requisite of success in carrying out a program of waterway development—the coöperation of the national, state, and local governments. Each of these political authorities possesses rights limiting the powers belonging to the others, and each has duties commensurate with its rights and powers. The nation has control over interstate commerce and thus over the channels of all rivers and canals usable for interstate traffic, while the stream bed and the use of the water for power, for production, and for other purposes belongs to the state. The minimizing of floods by constructing reservoirs and foresting catchment basins, and the reclamation of river lowlands by levees and other works belongs, in theory, to the powers and duties of the states; but the fact that almost every important river drains and traverses several states renders effective action concerning flood prevention, reclamation, and irrigation practically impossible by the states without the coöperation of the national government.

It will be necessary for the states to entrust to the federal government the exercise of some of their rights over water resources and to remunerate Congress for at least a part of the expenditures incurred in doing, on behalf of the states, what they acting severally are incapable of accomplishing. It requires no profound study of the situation to realize that the full utilization of the water resources of the United States can come about only by carrying out simultaneously plans for regulating the flow-off of water, for providing for its use for power, irrigation, and navigation, and for confining the streams to permanent channels adapted to the needs of navigation and so leveed, where necessary, as to prevent the inundation of bottom lands. Such comprehensive plans can be executed only by joint action of the states and the nation and by an equitable distribution of expenses among the central and state governments and the local communities.

How may this coöperation be brought about? Probably not without difficulty, and certainly not without keeping the necessity for joint action constantly in mind. A beginning has already been made. The assistance given by the Sanitary District of Chicago and the State of Illinois to the creation of a commercially useful waterway from Lake Michigan to the Mississippi River, and the plans of the state for the development and use of the water power of the Illinois River afford a conspicuous illustration of the coöperation of local and national authorities. Other instances might be cited. Increased coöperation can be secured in the future

in two ways—by the initiatory action of the states in offering to work with and to assist the federal government, and by action of Congress whereby appropriations for the improvement and extension of waterways shall, when practicable, become available only upon the fulfillment by the states or the municipalities of certain designated obligations. Some such conditional appropriations have been made; possibly the practice can be developed into a general policy.

The fourth condition precedent to the successful creation of commercially useful inland waterways—and the last requisite to which reference will be made in this paper—is the equipment of the rivers and canals with public terminals that are adequate to business needs, are technically up-to-date, and that provide for the direct and economical transfer of traffic from canal or river to rail and from car to barge or boat. A river channel however reliable, or a canal whatever its cross section, can be of comparatively little use unless traffic can be gotten to and from it readily and economically. The traffic development of a railway or a waterway is today conditioned even more definitely by terminal than by line facilities.

This fact seems to have been more clearly recognized in Europe than in the United States. The Rhine River, for instance, has sixty-two harbors equipped, as fully as commercial needs require, with storage and transfer facilities. At forty-three of these terminals the direct transfer of goods from trains to boats and river to rail is possible. Many of the harbors include large basins, some of which are used for the transfer and storage of commodities, while others are constructed to enable big industrial plants to locate on water frontage. Each city constructs its own harbor with but little, if any, aid from the state, the expense being borne by the city, aided in some instances by private interests. When the city's current revenues are insufficient to meet the cost of these works, funds are borrowed, moderate harbor dues being charged to meet interest and sinking-fund requirements.

The policy of the German states and cities in cooperating to create water transportation facilities is well illustrated at Frankfort-on-the-Main. During the past thirty years—but mainly between 1883 and 1895—Prussia has spent somewhat less than two and a half million dollars canalizing the Main from the Rhine to a point somewhat above Frankfort. This is what the state has done; Frankfort has done more. Between 1883 and 1900, the

city spent \$2,500,000 on harbor works, and is now engaged in the construction of a great commercial and industrial harbor and terminal that will cost, when completed, \$18,000,000.

The development of water terminals being as essential to the creation of inland water transportation facilities as are the provision and extension of navigable channels, the success of a program of waterway improvement depends almost as much upon what the cities may do as upon the course followed by the national government in coöperation with the states. Each municipality located upon an inland waterway must either own and develop its water terminal facilities or must so regulate them as to prevent private monopoly from throttling competition. In any case, there must be such public wharves, transfer, and storage facilities as the traffic of the waterway may require; close coördination of rail and water lines must be insisted upon; and provision must be made for the systematic expansion of port facilities in accordance with the growth of traffic.

Ordinarily the city can best accomplish this by owning all the water front, by leasing a part of the front to corporations for the establishment of terminals, and by constructing and operating such public port facilities as are needed to serve adequately the industries within the city and the traffic upon the waterway. Furthermore, the city, with such assistance of the state authority as may be necessary, must link up and keep in active coördination the railroads and the waterway. This will prove no easy task for the average American city.

This brief consideration of the requisites of success in carrying out a program of waterway development has emphasized the obstacles to be overcome. These are numerous and serious, but they can be surmounted. The present need is that the public shall definitely understand the difficulties to be overcome, and shall realize that the task to be performed requires the coöperation of the national, state, and local governments and, in some instances, of private beneficiary interests.

The development and conservation of the rich water resources of the United States is a duty to be met with zeal and intelligence by the present generation and by those that are to follow. It is highly important that the policy adopted should be as broad as the work to be accomplished, and that the methods followed in carrying out the program should be as sound and conservative as the task is large and difficult.